2

TOUCHPAD

PLUS Ver. 4.0

Teacher's Manual

Extended Support for Teachers

ORANGE
www.orangeeducation.in
www.thetouchpad.com

Teacher's Time Table

Periods / Days	0	I	II	III	IV	BREAK	V	VI	VII	VIII
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										
Saturday										

Development Milestones in a Child

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.

Age 5 - 8 Years	
Physical	• First permanent tooth erupts • Shows mature throwing and catching patterns • Writing is now smaller and more readable • Drawings are now more detailed, organised and have a sense of depth
Cognitive	• Attention continues to improve, becomes more selective and adaptable • Recall, scripted memory, and auto-biographical memory improves • Counts on and counts down, engaging in simple addition and subtraction • Thoughts are now more logical
Language	• Vocabulary reaches about 10,000 words • Vocabulary increases rapidly throughout middle childhood
Emotional/Social	• Ability to predict and interpret emotional reactions of others enhances • Relies more on language to express empathy • Self-conscious emotions of pride and guilt are governed by personal responsibility • Attends to facial and situational cues in interpreting another's feelings • Peer interaction is now more prosocial, and physical aggression declines

"If you cannot do great things, do small things in a great way."

Age 9 - 11 Years	
Physical	• Motor skills develop resulting in enhanced reflexes
Cognitive	• Applies several memory strategies at once • Cognitive self-regulation is now improved
Language	• Ability to use complex grammatical constructions enhances • Conversational strategies are now more refined
Emotional/Social	• Self-esteem tends to rise • Peer groups emerge

Age 11 - 20 Years	
Physical	• If a girl, reaches peak of growth spurt • If a girl, motor performance gradually increases and then levels off • If a boy, reaches peak and then completes growth spurt • If a boy, motor performance increases dramatically
Cognitive	• Is now more self-conscious and self-focused • Becomes a better everyday planner and decision maker
Emotional/Social	• May show increased gender stereotyping of attitudes and behaviour • May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

"Family is the most important thing in the world."

Teaching Pedagogies

Pedagogy is often described as the approach to teaching. It is the study of teaching methods including the aims of education and the ways in which such goals can be achieved.

Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

- Learning objectives
- Learning activities
- Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class:

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

↓

During the class:

Present the lesson plan.

↓

After the class:

Reflect on what worked well and why. If needed, revise the lesson plan.

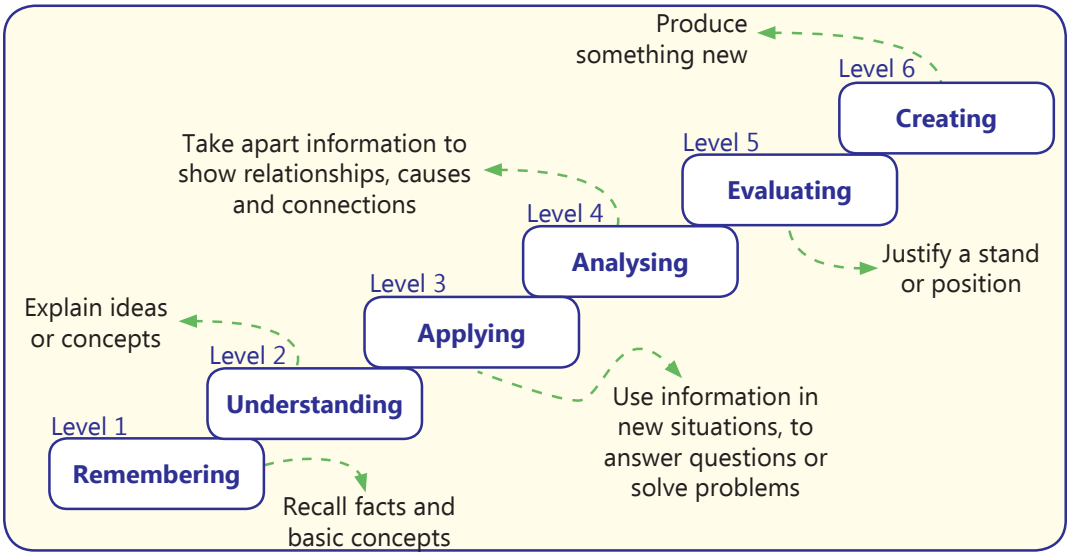
"Knowing yourself is the beginning of all wisdom."

Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.

Bloom's Taxonomy

Bloom's Taxonomy was created by **Dr Benjamin Bloom** and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

"If you have no confidence in self, you are twice defeated in the race of life."

Class 2

LESSON PLAN

Plus Ver. 4.0

1. More about a Computer

Teaching Objectives

Students will learn about

- ☞ Computer and Man
- ☞ Places Where Computers Are Used
- ☞ Types of Computers

Number of Periods	
Theory	Practical
2	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take off' given on page 11 of the main course book.

While teaching this chapter, tell the students that a computer is an electronic machine which helps us solve many problems.

Tell the students that the computer is a man-made machine and very much different from man. Share with the students the features of a computer covering:

- **Accuracy** – does not make mistake
- **Storage** – stores information and does not forget it
- **Work Process** – does not get tired and work for long hours
- **Speed** – works at a very high speed

Make the students understand that there are certain things which man can do better than computers covering:

- **Feelings** – Computer does not have feelings and does not understand emotions.
- **Instruction** – Computer cannot work without our instructions.
- **Decision** – Computer cannot take its own decisions.

Explain to the students about the different types of computers covering:

- **Desktop computer** – kept on desk or table
- **Laptop computer** – can be kept on lap also and is portable
- **Tablet computer** – smaller than a laptop and has a touchscreen

- **Smartphone** – mobile phone which has computer facilities

Tell the students that all these types of computers are called personal computers or PCs.

While teaching this chapter, tell the students that some machines like washing machine, air conditioner, television and ATM work smartly because these machines have a computer in them.

Share with the students, the names of the places where computers are used and the reason the computers are used there covering:

- **At home** – to play games, watch movies, listen to music, send e-mails, search information, etc.
- **In shops and restaurants** – to make bills, keep a record of items bought and sold, etc.
- **In offices** – to type and print documents
- **In schools** – to make time tables and report cards, teach students, keep fee records, keep record of library books, etc.
- **At railway stations and airports** – to reserve and cancel tickets, maintain train and flight timings, etc.
- **In hospitals** – to maintain records of patients, detect diseases, prepare medical reports, perform operations, etc.
- **In banks** – to maintain customer details, withdraw money (using ATMs), etc.
- **In designing** – to design and print newspapers, books, magazines, etc.
- **In police station** – to track the record of criminals, draw their sketches, maintain record of complaints, etc.
- **In space research and science labs** – to launch and control movement of satellite in space, forecasting weather, etc.

Ask the students to solve the exercise 'Double Tap' given on page number 13.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a computer?

Q. State any two features of a computer.

Q. Name two things which man can do better than computers.

Q. Name any two types of computers.

Q. Which is the largest type of computer?

Q. Which is the smallest type of computer?

Q. Can we keep all computers in our pocket?

Q. Name two computers which we can keep in our pocket.

Q. Name the computer which we keep on a desk or a table.

Q. Name some smart machines.

Q. Why are some machines smart?

Q. State any two uses of computers at home / railway station / airport.

Q. State any two uses of computers in a school / bank / shop / office / hospital.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 18 and 19 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', and 'Go Online' given on page 20 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 20 in the main course book. This will enhance the ability of the students and serve as a information and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 17 and 'Interdisciplinary Learning' given on page 18 at home and show it to him/her the next day.

Suggested Activity

Show the pictures of different types of computers to the students and ask the name of each type of computer.

2. Working of a Computer

Teaching Objectives

Students will learn about

- ☞ Working of Machines
- ☞ Working of a Computer

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 22 of the main course book.

Begin with telling the students about the working of some machines like:

- **Juicer** – we put fruit pieces inside it, the juicer squashes the fruits and gives out fresh juice.

Explain to the students that a computer works according to the commands or instructions given by us.

Share with the students the knowledge that in both these cases, the first step is input, the second step is process and the third step is output.

Let the students know that this cycle of working of machines is called Input-Process-Output cycle or IPO cycle.

Introduce the term Input as giving instructions to the computer.

Ask the students to solve the exercise 'Take Off' given on page number 22.

Tell the students that keyboard and mouse are used as input devices in a computer.

Introduce the term Process as action performed by computer on the instructions given by us.

Tell the students that Central Processing Unit (CPU) is processing device of a computer.

Introduce the term Output as result given by the computer after processing.

Tell the students that monitor and printer are used as output devices in a computer.

Ensure that the scope of Teacher's Corner given at the end of the chapter has been covered.

Extension

Ask the students some oral questions based on this chapter.

Q. How do machines work?

Q. What forms IPO cycle of a juicer?

Q. What does IPO stand for?

Q. What is Input-Process-Output cycle?

Q. Define Input / Process/ Output.

Q. Name two input / output devices.

Q. What does a computer use to follow each stage of the IPO cycle?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 25 and 26 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A Better Me' given on page 26 in the main course book.

Ask the students to complete the elements like 'Art Integration Learning' given on page 23 and 'Experiential Learning' given on page 24 at home and show it to him/her the next day.

Suggested Activity

Show some more machines with input and output to the students and ask the students to arrange these in correct order of the IPO cycle.

3. IPO Devices

Teaching Objectives

Students will learn about

- ☞ Input Devices
- ☞ Processing Device
- ☞ Output Devices
- ☞ Storage Devices

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 29 of the main course book.

While teaching this chapter, tell the students that a computer is made up of many devices which are categorized as input devices, processing devices, output devices and storage devices.

Introduce input devices as the parts that are used to give commands or instructions to the computer or tell the computer what to do.

Share with them pictures / models of some input devices like:

- **Keyboard** – It is used for typing text and numbers through keys.
- **Mouse** – It is used for drawing pictures and selecting objects through click.
- **Scanner** – It is used to send document or images from paper to computer.
- **Microphone** – It is used to record voice, music and sounds.

Make the students of aware of processing devices. Explain CPU to them.

Introduce output devices as the parts that are used to show result or output after processing.

Share with them pictures / models of some output devices like:

- **Monitor or Visual Display Unit (VDU)** – It is used to show the data that is input and its result after computer process through its front portion, screen.
- **Printer** – It is used to print the work done by computer on paper

Tell the students about the types of printers as Inkjet printers and Laser printers:

- **Speakers** – They are used to listening to music, sound and voice on a computer.
- **Headphones** – They work as small speaker and used to hear sound without disturbing others.
- **Headset** – It is used as a combination of microphone and headphones.

Introduce storage devices as the parts that are used to store our work in the computer.

Share with them pictures / models of some storage devices like:

- **Hard Disk** – It is rectangular in shape and fixed inside the CPU box.
- **Compact Disc (CD)** – It is circular in shape and portable storage device.

- **Digital Versatile Disc (DVD)** – It is circular in shape but with more storage capacity than CD.
- **Pen Drive or USB Flash Drive** – It is having more storage capacity than DVD but less than Hard Disk.

Show the students CD/DVD Drive and USB ports used to read the files stored in CD/DVD and Pen Drive respectively.

Ask the students to solve the exercise 'Double Tap' given on page number 31.

Extension

Ask the students some oral questions based on this chapter.

Q. What are the parts of a computer?

Q. What are input / output / storage devices?

Q. Give two examples of input / output / storage devices.

Q. What is a USB port used for?

Q. What is the name given to the combination of microphone and headphones?

Q. Expand CD / DVD.

Q. Which has more storage capacity: CD or DVD?

Q. Arrange in increasing order of storage capacity:

CD DVD Pen Drive Hard Disk

Evaluation

After explaining the chapter, let the students do the exercises given on pages 33 and 34 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A Better Me' given on pages 33 and 34 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 34 in the main course book. This will enhance the ability of the students and serve as communication and technology literacy activity.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 31 at home and show it to him/her the next day.

Suggested Activity

Ask the students to collect information about a modern storage device – Blue Ray Disc which looks like a CD/DVD but has much more storage capacity than the two.

4. The Keyboard and The Mouse

Teaching Objectives

Students will learn about

- ☞ Keyboard
- ☞ Desktop and Icons
- ☞ Mouse
- ☞ Keyboard and Mouse in a Laptop

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 38 of the main course book.

While teaching this chapter, tell the students that keyboard and mouse are used to perform various functions.

Show the students a keyboard and demonstrate:

- A keyboard has 104 keys
  - — **Alphabet keys –** They are used to type letters, words and sentences.
  - — **Number keys –** They are used to type numbers.

Tell the students that there are some special keys and explain in details:

- **Shift key –** It is used with other keys for different purposes like with alphabet keys to type in capital letters with caps Lock turned off and with number keys and symbol keys to type the symbols in the upper row of that key.
- **Symbol keys –** They are used to type special signs like @,$, %, *, etc. and punctuation marks like ?, ! :, " ", etc.
- **Backspace key –** It is used to erase letters and numbers on the left side of the cursor.
- **Spacebar –** It is used to give a bla nk space when you type words, letters or numbers.
- **Enter key –** It is used to start a new line or a paragraph.
- **Delete key –** It is used to erase letters and numbers to the right of the cursor.
- **Arrow keys –** It is used to move the cursor up, down, right and left.
- **Function keys –** They are 12 in number from F1 to F12 and used to perform a different function like F1 for Help, etc.
- **Caps Lock key –** It is used to type in capital letters.
- **Tab key –** It is used to move cursor several spaces forward at once.
- **Escape or Esc key –** It is used to cancel a task.

Show the students a mouse and demonstrate:

- A mouse has buttons to click and wheel to scroll.
- It displays an arrow called pointer on the screen.

Explain different types of mouse to the students.

Tell the students about the parts of a mouse and mouse pointer.

Show the proper use of a mouse along with the position of fingers.

- **Click or Single-click –** It is used to select an item.
- **Double-click –** It is used to open the selected item.
- **Right-click –** It is used to display list of properties of the selected item.
- **Drag –** It is used to move an item from one location to another.

Make the students aware of the desktop and its icons.

Also let them know about the keyboard and mouse within a laptop.

Give a brief introduction of the touchpad or trackpad in a laptop.

Ask the students to solve the exercise 'Double Tap' given on page number 40.

Extension

Ask the students some oral questions based on this chapter.

Q. Name the two commonly used input devices.

Q. How many keys are there on a standard keyboard?

Q. State one use of Shift key.

Q. What is Escape / Tab / Caps Lock key used for?

Q. How many Shift / Function keys are there on a keyboard?

Q. What is the use of Function / Symbol keys?

Q. What is a mouse?

Q. What is pointer?

Q. What is single-click / double-click / right-click / drag used for?

Q. What is a desktop?

Q. Define icons.

Q. What is Start menu?

Q. Where are keyboard and mouse present in a laptop?

Q. Define touchpad.

Q. Where are mouse buttons present in a laptop?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 44 and 45 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A Better Me' given on page 45 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 46 in the main course book. This will enhance the ability of the students and serve as a collaboration and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 40 in the computer lab, 'Interdisciplinary Learning' given on page 42 in the computer lab and 'Art Integration Learning' given on page 46 at home and show it to him/her the next day.

Suggested Activity

Ask the students to draw a keyboard on an A4 sheet of paper and label these keys:

- Shift keys
- Escape key
- Symbol keys
- Keys to spell the name of the student
- Enter key
- Tab key
- Function keys

5. Introduction to Word 2019

Teaching Objectives

- ☞ Starting Word 2019
- ☞ Components of Word 2019 Window
- ☞ Typing the Text
- ☞ Saving a Document

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 50 of the main course book.

Begin with introduction of the app 'Word'. Make them aware that the computer program 'Word' helps us type letters, poems and reports on a computer.

Explain the students how to start Word 2019.

Let the students know about the components of Word 2019 Window and their utilities.

Explain to the students the method of typing in Word 2019.

Also let the students know how a document is saved in Word 2019.

Ensure that the scope of Teacher's Corner given at the end of the chapter has been covered.

Extension

Q. Define Word 2019.

Q. Write the steps to start Word 2019.

Q. Explain components of Word 2019 window.

Q. What is contained in the Ribbon in Word 2019?

Q. Define document area in Word 2019.

Q. What is cursor?

Q. Write the steps to type text in Word 2019.

Q. Write the steps to save a document in Word 2019.

Evaluation

After explaining the chapter, let the students do the exercises given on page 53 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' given on page 54 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 54 in the main course book. This will enhance the ability of the students and serve as a flexibility and technology literacy activity.

Suggested Activity

Ask the students to write a paragraph on 'My favourite Pastime' in Word 2019.

6. Let's Learn Paint

Teaching Objectives

- ☞ Starting Paint
- ☞ Drawing Shapes
- ☞ Drawing Freehand
- ☞ Typing in Paint
- ☞ Choosing Colour
- ☞ Moving the Selection
- ☞ Foreground and Background Colour
- ☞ Parts of Paint Window
- ☞ Filling Colour in Shape
- ☞ Using Brushes
- ☞ Using Magnifier
- ☞ Selecting a Drawing
- ☞ Cropping an Image

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 56 of the main course book.

While teaching this chapter, tell the students that Paint is computer program that lets us draw and paint on computer.

Begin with the description of the steps to start Paint.

Make the students aware of parts of the Paint window.

Tell the students about the Shapes group.

Share with them the knowledge of different shapes present in Shapes group like:

Rounded Rectangle Shape

Curve Shape

Polygon Shape

Explain the students how colour is filled in a shape.

Tell the students about freehand drawing. Also let them know that Pencil tool is used in freehand drawing.

Provide the students with right information about using brushes.

Make the students aware that typing can be done in Paint using Text tool.

Tell the students about the Magnifier tool.

Explain that Color picker tool is used to choose a colour from an existing picture and to colour the new one.

Also teach the students how to select a drawing using Select option.

Explain how the selected object can be moved.

Let the students know about the process of cropping an image.

Finally make them aware of Foreground and Background colour also.

Ask the students to solve the exercise 'Double Tap' given on page number 62.

Extension

Ask the students some oral questions based on this chapter.

Evaluation

After explaining the chapter, let the students do the exercises given on pages 65 and 66 in the main course book. Tell the students to try sections such as 'Scratch Your Brain', 'Go Online' and 'A Better Me' given on page 67 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 67 in the main course book. This will enhance the ability of the students and serve as a technology literacy activity full of responsibility and leadership.

Suggested Activity

Ask the students to draw a jungle scene in Paint.

7. Reasoning and Analysis

Teaching Objectives

Students will learn about

- ☞ Number Pyramid
- ☞ Secret Message: Decoding
- ☞ Number Grid

Number of Periods	
Theory	Practical
1	0

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take off' given on page 71 of the main course book.

Introduce Number Pyramids to the students in details with the help of pictures or charts.

Tell the students about Number Grid. Also, tell them how to solve by giving some examples which will improve their understanding of the topic.

Make the students aware of secret message: Decoding.

Show examples for all the topics for better clarity of the lesson at the end.

Ask the students to solve the exercise 'Double Tap' given on pages number 72 and 73.

Extension

Ask the students some oral questions based on this chapter.

Q. What is a number pyramid?

Q. What is a grid?

Q. What is a number grid?

Q. Define decoding.

Q. In what forms can the hidden message be present?

Evaluation

After explaining the chapter, let the students do the exercises given on pages 74 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on pages 74 and 75 in the main course book.

Ask the students to complete the elements like 'Interdisciplinary Learning' given on page 71 at home and show it to him/her the next day.

Suggested Activity

Ask the students to practise more questions based on decoding.

8. More on ScratchJr

Teaching Objectives

- Components of ScratchJr Window
- Controlling the Script
- Moving the Character
- Modifying the Character
- Adding Sound
- Controlling the Character
- Creating a Project

Number of Periods	
Theory	Practical
2	2

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 77 of the main course book.

While teaching this chapter, make the students recall the learnings about ScratchJr taught in previous class that ScratchJr is a computer program or app used to create animated stories and games.

Begin with description of components of ScratchJr window like:

Save Button

Reset Character Button

Stage

Character

Plus Button

Green Flag

Blocks Palette

Block Categories

Let the students know how to control the script.

also tell them about the role of Events block.

Explain how Motion blocks are used to move a character.

Make the students understand how Looks blocks are used to modify the character.

Tell the students about Sound blocks.

Explain how control blocks are used to control the character.

Finally make the students understand how to use all the above mentioned blocks to create a project.

Ask the students to solve the exercise 'Double Tap' given on page number 79.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain components of ScratchJr window

Q. What is Events block?

Q. Write the steps to move a character using Motion blocks.

Q. Which block is used to modify a character?

Q. What is the use of Sound blocks?

Q. What are control blocks used for?

Q. Write the steps to create a project using different blocks.

Evaluation

After explaining the chapter, let the students do the exercises given on page 81 in the main course book as Test Your Skills. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' and Let's Get Better given on page 82 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 82 in the main course book. This will enhance the ability of the students and serve as a critical thinking and technology literacy activity.

Ask the students to complete the elements like 'Art Integration Learning' given on page 80 at home and show it to him/her the next day.

Suggested Activity

Ask the students to create a project of their choice using different blocks of ScratchJr.

9. Artificial Intelligence Around Us

Teaching Objectives

Students will learn about

- ☞ Artificially Intelligent Machines
- ☞ AI Around Us
- ☞ Robots

Number of Periods	
Theory	Practical
2	1

Teaching Plan

Before starting the chapter, ask the students to solve the question in 'Take Off' given on page 84 of the main course book.

Explain the meaning of Artificially Intelligent machines to the students with proper and simple examples.

Tell the students what AI is, how it has surrounded us and what its purpose is this in real life. Describe in simple words.

Define the following to the students:

- Voice Assistant
- Face Detection
- Navigation

Explain the meaning of Robots to the students with their role around us with examples.

Relate all these to their daily life routine.

Ask the students to solve the exercise 'Take off' given on page number 85.

Extension

Ask the students some oral questions based on this chapter.

Q. What is artificial intelligene?

Q. What should an artificially intelligent machine be capable of?

Q. Define the following:

- Voice Assistant
- Face Detection
- Navigation

Q. What is a robot?

Q. How do robots help us?

Ask the students to solve the exercise 'Double Tap' given on page number 85.

Evaluation

After explaining the chapter, let the students do the exercises given on page 87 in the main course book. Tell the students to try sections such as 'Scratch Your Brain' and 'Go Online' given on page 88 in the main course book.

Take the students to the computer lab and let them practise the activity given in the DIY In The Lab section on page 88 in the main course book. This will enhance the ability of the students and serve as a creativity and technology literacy activity.

Ask the students to complete the elements like 'Experiential Learning' given on page 86 at home and show it to him/her the next day.

Suggested Activity

Ask the students to practise more in Quick Draw.